

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ceweles Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IS THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'X-535

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 24th day of January in
the year of our Lord one thousand nine
hundred and seventy-four

Attest:

L. E. Rollin

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Earl L. Berg

Secretary of Agriculture

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

1. VARIETY NAME OR TEMPORARY DESIGNATION XK-535	2. KIND NAME Soybean	FOR OFFICIAL USE ONLY	
3. GENUS AND SPECIES NAME Glycine max	4. FAMILY NAME (Botanical) Leguminosae	PV NUMBER 7162	
	5. DATE OF DETERMINATION October 1970	FILING DATE 4.7.71	TIME 10:30 A.M.
		FEE RECEIVED \$ 250	BALANCE DUE \$ —
		\$ 250	\$ —
		\$ 250	\$ —
6. NAME OF APPLICANT(S) Teweles Seed Co. By Robert L. Teweles	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 1600 Oregon Street Muscatine, Iowa 52761	8. TELEPHONE AREA CODE AND NUMBER 319-263-0142	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Teweles Seed Company	10. STATE OF INCORPORATION Wisconsin	11. DATE OF INCORPORATION 1911	

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

Mr. Robert L. Teweles
Teweles Seed Co.
1600 Oregon St.
Muscatine, Iowa 52761

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- ☒ 13B. Exhibit B, Botanical Description of the Variety
- ☒ 13C. Exhibit C, Objective Description of the Variety
- ☒ 13D. Exhibit D, Data Indicative of Novelty
- ☒ 13E. Exhibit E, Statement of the Basis of Applicant's Ownership

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? (See Section 83(a). (If "Yes," answer 14B and 14C below.) ☐ YES ☒ NO14B. Does the applicant(s) specify that this variety be limited as to number of generations? ☐ YES ☒ NO14C. If "Yes," to 14B, how many generations of production beyond breeder seed? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

February 4, 1973
(DATE)

Robert L. Teweles
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and \$250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, 6525 Belcrest Road, Hyattsville, Maryland 20782. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Insert the date the applicant determined that he had a new variety based on the definition in Section 41 (a) of the Act and decision is made to increase the seed.
- 13a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.
- 13b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.
- 13c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.
- 13d Provide complete data indicative of novelty. Seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty may be submitted. Seeds submitted may be sterile.
- 13e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

12A - XK-535 = Cayuga x Chippewa 64 (c)48

- 1966 Hand crossed F_1 seed obtained.
- 1967 F_1 plant grown out - F_2 seed obtained.
- 1967-68 F_2 seed grown out in Hawaii.
- 1968 F_3 individual plant selected, labeled Cayuga x Chippewa 64 (c)48, Clinton, Wisconsin.
- 1968-69 Sent 57 grams of seed from this single F_3 plant Cayuga x Chippewa 64(c)48 to Hawaii for winter increase. Obtained 1650 grams of F_4 seed for increase and trials.
- 1969 Tested this F_5 bulk line at three locations in replicated yield trials. Established an increase block 4 rows - 1200 feet long. Increase block was rogued for off-types and to establish variety type - 450 pounds of breeders stock seed produced.
- 1970 Tested line Cayuga x Chippewa (c)48 at two locations in replicated trials. Small commercial increase of 14.5 acres was checked for off-type plants. Line performance was satisfactory in yield trials and increase; assigned variety name of XK-535.

12B - Mature Plant Characteristics

<u>Variety</u>	<u>Flower Color</u>	<u>Hilum Color</u>	<u>Pubes. Color</u>	<u>Plant Height</u>	<u>Plant Type</u>	<u>Phytophthora</u>
XK-535 vs.	white	black	brown	37"	med.bush	resistant
Corsoy ¹⁰	purple	yellow	grey	34"	med.thin	susceptible
Amsoy ¹¹	purple	yellow	grey	36"	med.thin	susceptible
Beeson ¹¹	purple	imp. black	grey	38"	med.thin	resistant
*XK-520	purple	black	brown	36"	med.thin	resistant

*differs from XK-535 in flower color

OBJECTIVE DESCRIPTION OF VARIETY

SOYBEAN (GLYCINE MAX)

Amended
Exhibit C

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S) RJS Teweles Seed Company by Wm. H. Davis		FOR OFFICIAL USE ONLY	
ADDRESS (Street and No., or R.F.D. No.; City, State, and ZIP Code) Research Central Route #1 Clinton, Wisconsin 53525		PVPO NUMBER 7162	VARIETY NAME OR TEMPORARY DESIGNATION XK-535
Place the appropriate number that describes the varietal character of this variety in the boxes below.			
1. SEED SHAPE:			
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">1</div> 1 = SPHERICAL	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = SPHERICAL FLATTENED	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = ELONGATE	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">4</div> 4 = OTHER (Specify)
2. SEED COAT COLOR:		SHADE:	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">1</div> 1 = YELLOW	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = GREEN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = BROWN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">4</div> 4 = BLACK
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">5</div> 5 = OTHER (Specify)		<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = LIGHT 2 = MEDIUM 3 = DARK	
3. SEED COAT LUSTER:		4. SEED SIZE	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = DULL	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = SHINY	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> <div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> GRAMS PER 100 SEEDS	
5. HILUM COLOR:		SHADE:	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">6</div> 1 = BUFF	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = YELLOW	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = BROWN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">4</div> 4 = GRAY
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">5</div> 5 = IMPERFECT BLACK	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = LIGHT 2 = MEDIUM 3 = DARK		
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">6</div> 6 = BLACK 7 = OTHER (Specify)			
6. COTYLEDON COLOR:		7. LEAFLET SIZE (See Reverse):	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">1</div> 1 = YELLOW	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = GREEN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = SMALL 2 = MEDIUM 3 = LARGE	
8. LEAFLET SHAPE:			
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">1</div> 1 = OVATE	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = OBLONG	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = LANCEOLATE	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">4</div> 4 = ELLIPTICAL
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">5</div> 5 = OTHER (Specify)			
9. LEAF COLOR (See reverse):		10. FLOWER COLOR:	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = LIGHT GREEN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = MEDIUM GREEN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">1</div> 1 = WHITE 2 = PURPLE	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = DARK GREEN		<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = OTHER (Specify)	
11. POD COLOR:		12. POD SET:	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = TAN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = BROWN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">1</div> 1 = SCATTERED 2 = CONCENTRATED	
13. PLANT PUBESCENCE COLOR:		SHADE:	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = GRAY	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = BROWN	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = LIGHT 2 = MEDIUM 3 = DARK	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = OTHER (Specify)			
14. PLANT TYPES (See Reverse):		15. PLANT HABIT:	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 1 = SLENDER	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 2 = BUSHY	<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> 1 = DETERMINATE 2 = INDETERMINATE	
<div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> 3 = INTERMEDIATE			

No. 7162 (XK-535)
EXHIBIT D

XK-535 is most similar in describable characteristics to Chippewa 64 and Cayuga, the parents used to obtain XK-535. Significant differences from both of these varieties are as follows:

CHARACTER DIFFERENCES

<u>VARIETY</u>	<u>MATURITY</u>	<u>SEED COAT</u>
XK-535	(1) Maturity Group II	(2) Seed Coat yellow-shiny
Chippewa 64	Maturity Group I	Seed coat yellow, shiny
Cayuga	Maturity Group I	Seed coat black

12E - Applicant is the actual breeder; ownership rights are granted to and held by the ~~the~~ Teweles Seed Company.

RJS

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (GLYCINE MAX)*Amended
Exhibit C*

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

RJ5 ~~Research~~ Teweles Seed Company by Wm. H. Davis

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

Research Central

Route #1

Clinton, Wisconsin 53525

FOR OFFICIAL USE ONLY

PVPO NUMBER

7162

VARIETY NAME OR TEMPORARY
DESIGNATION

XK-535

Place the appropriate number that describes the varietal character of this variety in the boxes below.

1. SEED SHAPE:

☒ 1 = SPHERICAL ☐ 2 = SPHERICAL FLATTENED ☐ 3 = ELONGATE ☐ 4 = OTHER (Specify)

2. SEED COAT COLOR:

☒ 1 = YELLOW ☐ 2 = GREEN ☐ 3 = BROWN ☐ 4 = BLACK
☐ 5 = OTHER (Specify)

SHADE:

☒ 1 = LIGHT ☐ 2 = MEDIUM ☐ 3 = DARK

3. SEED COAT LUSTER:

☒ 1 = DULL ☐ 2 = SHINY

4. SEED SIZE

☒ 1 ☒ 2 GRAMS PER 100 SEEDS

5. HILUM COLOR:

☒ 1 = BUFF ☐ 2 = YELLOW ☐ 3 = BROWN ☐ 4 = GRAY ☐ 5 = IMPERFECT BLACK
☐ 6 = BLACK ☐ 7 = OTHER (Specify)

SHADE:

☒ 1 = LIGHT ☐ 2 = MEDIUM ☐ 3 = DARK

6. COTYLEDON COLOR:

☒ 1 = YELLOW ☐ 2 = GREEN

7. LEAFLET SIZE (See Reverse):

☒ 1 = SMALL ☐ 2 = MEDIUM ☐ 3 = LARGE

8. LEAFLET SHAPE:

☒ 1 = OVATE ☐ 2 = OBLONG ☐ 3 = LANCEOLATE ☐ 4 = ELLIPTICAL ☐ 5 = OTHER (Specify)

9. LEAF COLOR (See reverse):

☒ 1 = LIGHT GREEN ☐ 2 = MEDIUM GREEN ☐ 3 = DARK GREEN

10. FLOWER COLOR:

☒ 1 = WHITE ☐ 2 = PURPLE
☐ 3 = OTHER (Specify)

11. POD COLOR:

☒ 1 = TAN ☐ 2 = BROWN ☐ 3 = BLACK

12. POD SET:

☒ 1 = SCATTERED ☐ 2 = CONCENTRATED

13. PLANT PUBESCENCE COLOR:

☒ 1 = GRAY ☐ 2 = BROWN ☐ 3 = OTHER (Specify)

SHADE:

☒ 1 = LIGHT ☐ 2 = MEDIUM ☐ 3 = DARK

14. PLANT TYPES (See Reverse):

☒ 1 = SLENDER ☐ 2 = BUSHY ☐ 3 = INTERMEDIATE

15. PLANT HABIT:

☒ 1 = DETERMINATE ☐ 2 = INDETERMINATE
☐ 3 = OTHER (Specify)

16. HYPOCOTYL COLOR:

☒ 1 = GREEN ☐ 2 = PURPLE

17. SEED PROTEIN:

☐ 1 = A ☐ 2 = B18. NUMBER OF DAYS TO FLOWERING
(Place a zero in first box (e.g., 0 9) when
days are 9 or less.)

19. MATURITY GROUP:

☒ 1 = 00 ☐ 2 = 0 ☐ 3 = I ☐ 4 = II ☐ 5 = III
☐ 4 ☐ 6 = IV ☐ 7 = V ☐ 8 = VI ☐ 9 = VII ☐ 10 = VIII20. SIZE OF 10 DAY OLD SEEDLING GROWN UNDER CONSTANT LIGHT (Growth Chamber) AT 25° C. (Place a zero in first box
(e.g., 0 2) when size is 9 mm. or less.) MM. LENGTH
OF SEEDLING MM. LENGTH
OF COTYLEDON MM. WIDTH
OF COTYLEDON

21. DISEASE: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☒ 1 BACTERIAL
PUSTULE☐ 0 SOYBEAN
CYST☐ 0 DOWNY
MILDEW☒ 2 PURPLE
STAIN☐ 0 POD AND
STEM BLIGHT☐ 0 ROOT
KNOT☐ 0 FROGEYE☐ 0 STEM
CANKER☒ 2 PHYTO-
PHTHORA☐ 0 BROWN
STEM ROT☐ 0 TARGET
SPOT☐ 0 BROWN
SPOT☐ 0 BUD
BLIGHT☐ 0 WILDFIRE☐ 0 RHIZOCTONIA
ROT☐ OTHER (Specify)

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant shape	Chippewa 64	Petiole angle	Cayuga
Leaf shape	Cayuga	Seed size	Cayuga
Leaf color	Cayuga	Seed shape	Chippewa 64
Leaf surface	Cayuga	Seedling pigmentation	Chippewa 64

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY:

VARIETY	NO. OF DAYS TO MATURITY	LODGING SCORE	PLANT HEIGHT	LEAF SIZE		CONTENT		AVERAGE NO. OF PODS PER PLANT	IODINE NO.
				Width	Length	Protein	Oil		
Submitted	118	1.8	35"			40.4	21.9%		
Name of similar variety Amsoy	117	1.9	36"			39.5	23.0		

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

1. Scott, Walter O. and Samuel R. Aldrich, 1970, Modern Soybean Production, The Farmer Quarterly.
2. Norman, A. G., 1963, The Soybean: Genetics, Breeding, Physiology, Nutrition, Management.
3. McKie, J. W., and K. L. Anderson, 1970, The Soybean Book.

LEAF COLOR: Nickerson's or any recognized color fan may be used to determine the leaf color of the described variety. The following Soybean varieties may be used as a guide to identify the colors listed on the form.

COLOR	VARIETY
Light Green	"Ada"
Medium Green	"Wilkin"
Dark Green	"Swift"

LEAF SIZE: The following varieties may be used as a guide to identify the relative size leaves.

SIZE	VARIETY
Small	"Amsoy"
Medium	"Bonus"
Large	"Anoka"

PLANT TYPE: The following varieties may be used as a guide to identify the plant type.

TYPE	VARIETY
Slender	"Vansoy"
Intermediate	"Wirth"
Bushy	"Adelphia"